IFWO

RAW SEQUENCE LISTING   DATE: 08/27/2004
PATENT APPLICATION: **US/10/738,917**   TIME: 16:56:19

Input Set : **N:\Crf3\RULE60\10738917.raw**
Output Set: **N:\CRF4\08272004\J738917.raw**

```
  1 <110> APPLICANT: Hogrefe, Holly
  2        Hansen, Connie J
  3 <120> TITLE OF INVENTION: Polymerase Enhancing Factor (PEF) Extracts, PEF Protein
Complexes,
  4        Isolated PEF Proteins, and Methods for Purifying and Identifying
  5 <130> FILE REFERENCE: 4121.0116-02
  6 <140> CURRENT APPLICATION NUMBER: US/10/738,917
  7 <141> CURRENT FILING DATE: 2003-12-16
  8 <150> PRIOR APPLICATION NUMBER: US/09/399,003
  9 <151> PRIOR FILING DATE: 1999-09-20
 10 <150> PRIOR APPLICATION NUMBER: PCT/ US98/05497
 11 <151> PRIOR FILING DATE: 1998-03-20
 12 <150> PRIOR APPLICATION NUMBER: US 08/957,709
 13 <151> PRIOR FILING DATE: 1997-10-24
 14 <150> PRIOR APPLICATION NUMBER: US 08/822,774
 15 <151> PRIOR FILING DATE: 1997-03-21
 16 <160> NUMBER OF SEQ ID NOS: 89
 17 <170> SOFTWARE: PatentIn version 3.1
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 15
 21 <212> TYPE: PRT
 22 <213> ORGANISM: Pyrococcus furiosus
 23 <220> FEATURE:
 24 <221> NAME/KEY: misc_feature
 25 <222> LOCATION: (1)..(15)
 26 <223> OTHER INFORMATION: "X" represents any amino acid
 27 <400> SEQUENCE: 1
W--> 28        Xaa Xaa Leu His His Val Lys Leu Ile Tyr Ala Thr Xaa Xaa Xaa
 29        1               5                   10                  15
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 32 <211> LENGTH: 15
 33 <212> TYPE: PRT
 34 <213> ORGANISM: Pyrococcus furiosus
 35 <220> FEATURE:
 36 <221> NAME/KEY: misc_feature
 37 <222> LOCATION: (1)..(15)
 38 <223> OTHER INFORMATION: "X" represents any amino acid
 39 <400> SEQUENCE: 2
W--> 40        Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Arg Xaa Glu Xaa Leu Xaa Xaa
 41        1               5                   10                  15
 43 <210> SEQ ID NO: 3
 44 <211> LENGTH: 35
 45 <212> TYPE: PRT
 46 <213> ORGANISM: Pyrococcus furiosus
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47 <220> FEATURE:
48 <221> NAME/KEY: MISC_FEATURE
49 <222> LOCATION: (1)..(35)
50 <223> OTHER INFORMATION: "X" represents any amino acid
51 <400> SEQUENCE: 3
N--> 52      Xaa Leu Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Xaa Arg Xaa
53           1               5                   10                  15
54           Leu Val Gly Lys Xaa Ile Val Leu Ala Ile Pro Gly Xaa Xaa Ala Xaa
55                       20                  25                  30
56           Xaa Xaa Xaa
57                   35
59 <210> SEQ ID NO: 4
60 <211> LENGTH: 18
61 <212> TYPE: PRT
62 <213> ORGANISM: Pyrococcus furiosus
63 <220> FEATURE:
64 <221> NAME/KEY: MISC_FEATURE
65 <222> LOCATION: (1)..(18)
66 <223> OTHER INFORMATION: "X" represents any amino acid
67 <400> SEQUENCE: 4
N--> 68      Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Arg Xaa Glu Xaa Leu Xaa Glu Xaa
69           1               5                   10                  15
70           Xaa Xaa
72 <210> SEQ ID NO: 5
73 <211> LENGTH: 17
74 <212> TYPE: PRT
75 <213> ORGANISM: Pyrococcus furiosus
76 <220> FEATURE:
77 <221> NAME/KEY: MISC_FEATURE
78 <222> LOCATION: (1)..(17)
79 <223> OTHER INFORMATION: "X" represents any amino acid
80 <400> SEQUENCE: 5
N--> 81      Xaa Tyr Asp Ala Val Ile Met Ala Ala Ala Val Val Asp Phe Arg Pro
82           1               5                   10                  15
83           Lys
85 <210> SEQ ID NO: 6
86 <211> LENGTH: 24
87 <212> TYPE: PRT
88 <213> ORGANISM: Pyrococcus furiosus
89 <400> SEQUENCE: 6
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91           1               5                   10                  15
92           Asn Gln Val Val Leu Ile Gly Arg
93                       20
95 <210> SEQ ID NO: 7
96 <211> LENGTH: 17
97 <212> TYPE: PRT
98 <213> ORGANISM: Pyrococcus furiosus
99 <220> FEATURE:
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100 <221> NAME/KEY: MISC_FEATURE
101 <222> LOCATION: (1)..(17)
102 <223> OTHER INFORMATION: "X" represents any amino acid
103 <400> SEQUENCE: 7
--> 104      Gly Ala Met Leu His His Val Lys Leu Ile Tyr Ala Xaa Lys Leu Arg
105      1              5                  10                 15
106      Lys
108 <210> SEQ ID NO: 8
109 <211> LENGTH: 18
110 <212> TYPE: PRT
111 <213> ORGANISM: Pyrococcus furiosus
112 <220> FEATURE:
113 <221> NAME/KEY: misc_feature
114 <222> LOCATION: (1)..(18)
115 <223> OTHER INFORMATION: "X" represents any amino acid
116 <400> SEQUENCE: 8
--> 117      Gly Ala Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Xaa Xaa
118      1              5                  10                 15
119      Arg Lys
121 <210> SEQ ID NO: 9
122 <211> LENGTH: 13
123 <212> TYPE: PRT
124 <213> ORGANISM: Pyrococcus furiosus
125 <400> SEQUENCE: 9
126        Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Leu
127      1              5                  10
129 <210> SEQ ID NO: 10
130 <211> LENGTH: 16
131 <212> TYPE: PRT
132 <213> ORGANISM: Pyrococcus furiosus
133 <220> FEATURE:
134 <221> NAME/KEY: MISC_FEATURE
135 <222> LOCATION: (1)..(16)
136 <223> OTHER INFORMATION: "X" represents any amino acid
137 <400> SEQUENCE: 10
-> 138      Gly Xaa Xaa Xaa Pro Asp Trp Xaa Xaa Lys Phe Arg Lys Glu Glu Ser
139      1              5                  10                 15
141 <210> SEQ ID NO: 11
142 <211> LENGTH: 17
143 <212> TYPE: PRT
144 <213> ORGANISM: Pyrococcus furiosus
145 <400> SEQUENCE: 11
146      Gly Ala Ile Leu Leu Pro Asp Trp Lys Ile Arg Lys Glu Ile Leu Ile
147      1              5                  10                 15
148      Glu
150 <210> SEQ ID NO: 12
151 <211> LENGTH: 16
152 <212> TYPE: PRT
153 <213> ORGANISM: Pyrococcus furiosus
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      155 <221> NAME/KEY: MISC_FEATURE
      156 <222> LOCATION: (1)..(16)
      157 <223> OTHER INFORMATION: "X" represents any amino acid
      158 <400> SEQUENCE: 12
W--> 159      Xaa Met His His Val Ile Lys Leu Xaa Tyr Ala Thr Xaa Ser Arg Lys
      160      1               5                   10                  15
      162 <210> SEQ ID NO: 13
      163 <211> LENGTH: 18
      164 <212> TYPE: PRT
      165 <213> ORGANISM: Pyrococcus furiosus
      166 <400> SEQUENCE: 13
      167      Met Leu Tyr Leu Val Arg Pro Asp Trp Lys Arg Arg Lys Glu Ile Leu
      168      1               5                   10                  15
      169      Ile Glu
      171 <210> SEQ ID NO: 14
      172 <211> LENGTH: 23
      173 <212> TYPE: DNA
      174 <213> ORGANISM: Artificial Sequence
      175 <220> FEATURE:
      176 <223> OTHER INFORMATION: synthetic
      177 <400> SEQUENCE: 14
      178      caycaygaha arythattta cgc                                    23
      180 <210> SEQ ID NO: 15
      181 <211> LENGTH: 23
      182 <212> TYPE: DNA
      183 <213> ORGANISM: Artificial Sequence
      184 <220> FEATURE:
      185 <223> OTHER INFORMATION: synthetic
      186 <220> FEATURE:
      187 <221> NAME/KEY: misc_feature
      188 <222> LOCATION: (1)..(23)
      189 <223> OTHER INFORMATION: "n" is a, t, g, or c
      190 <400> SEQUENCE: 15
W--> 191      gccatdatna cdgcrtcgta ttt                                     23
      193 <210> SEQ ID NO: 16
      194 <211> LENGTH: 23
      195 <212> TYPE: DNA
      196 <213> ORGANISM: Artificial Sequence
      197 <220> FEATURE:
      198 <223> OTHER INFORMATION: synthetic
      199 <400> SEQUENCE: 16
      200      caycaygaha arythatata cgc                                    23
      202 <210> SEQ ID NO: 17
      203 <211> LENGTH: 20
      204 <212> TYPE: DNA
      205 <213> ORGANISM: Artificial Sequence
      206 <220> FEATURE:
      207 <223> OTHER INFORMATION: synthetic
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RAW SEQUENCE LISTING   DATE: 08/27/2004
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        Input Set : **N:\Crf3\RULE60\10738917.raw**
        Output Set: **N:\CRF4\08272004\J738917.raw**

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 208 <400> SEQUENCE: 17
 209       ardacdacyt grttttcttc                                          20
 211 <210> SEQ ID NO: 18
 212 <211> LENGTH: 1209
 213 <212> TYPE: DNA
 214 <213> ORGANISM: Pyrococcus furiosus
 215 <220> FEATURE:
 216 <221> NAME/KEY: misc_feature
 217 <222> LOCATION: (1)..(1209)
 218 <223> OTHER INFORMATION: "n" is a, t, g, or c
 219 <400> SEQUENCE: 18
 220       atgcttcacc acgtcaagct aatctacgcc acaaaaagtc gaaagctagt tggaaaaaag      60
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W--> 221   atagtcnnnn nnnnnccagg gagtattgcg gctttggatg tgaaagcttg tgagggacta   120
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 222       attaggcatg gggccgaagt tcatgcagtg atgagtgagg cagccaccaa gataattcat     180
 223       ccttatgcat ggaatttgcc cacgggaaat ccagtcataa ctgagatcac tggatttatc     240
 224       gagcatgttg agttagcagg ggaacatgag aataaagcag atttaatttt ggtttgtcct     300
 225       gccactgcca acacaattag taagattgca tgtggaatag atgatactcc agtaactaca     360
 226       gtcgtgacca cagcatttcc ccacattcca attatgatag ccccagcaat gcatgagaca     420
 227       atgtacaggc atcccatagt aagggagaac attgaaaggt taaagaagct tggcgttgag     480
 228       tttataggac caagaattga ggagggaaag gcaaagttg caagcattga tgaaatagtt     540
 229       tacagagtta ttaaaaagct ccacaaaaaa acattggaag ggaagagagt cctagtaacg     600
 230       gcgggagcaa caagagagta catagatcca ataagattca taacaaatgc cagcagtgga     660
 231       aaaatgggag tagcgttggc tgaagaagca gatttagag gagctgttac cctcataaga     720
 232       acaaagggaa gtgtaaaggc ttttagaatc agaaaaatca aattgaaggt tgagacagtg     780
 233       gaagaaatgc tttcagcgat tgaaaatgag ttgaggagta aaaagtatga cgtagttatt     840
 234       atggcagctg ctgtaagcga tttttaggcca aaaattaaag cagagggaaa aattaaaagc     900
 235       ggaagatcaa taacgataga gctcgttccn nnnaatccca aaatcattga tagaataaag     960
 236       gaaattcaac caaatgtctt tcttgttgga tttaaagcag aaacttcaaa agaaaagctt    1020
 237       atagaagaag gtaaaaggca gattgagagg gccaaggctg acttagtcgt tggtaacaca    1080
 238       ttggaagcct ttggaagcga ggaaaaccaa gtagtattaa ttggcagaga tttcacaaaa    1140
 239       gaacttccaa aaatgaaaaa gagagagtta gcagagagaa tttgggatga gatagagaaa    1200
 240       ttnctgtcc                                                          1209
 242 <210> SEQ ID NO: 19
 243 <211> LENGTH: 403
 244 <212> TYPE: PRT
 245 <213> ORGANISM: Pyrococcus furiosus
 246 <220> FEATURE:
 247 <221> NAME/KEY: MISC_FEATURE
 248 <222> LOCATION: (1)..(403)
 249 <223> OTHER INFORMATION: "X" represents any amino acid
 250 <400> SEQUENCE: 19
 251       Met Leu His His Val Lys Leu Ile Tyr Ala Thr Lys Ser Arg Lys Leu
 252       1               5                  10                  15
```
W--> 253   Val Gly Lys Lys Ile Val Xaa Xaa Xaa Pro Gly Ser Ile Ala Ala Leu
```
 254                       20                  25                  30
 255       Asp Val Lys Ala Cys Glu Gly Leu Ile Arg His Gly Ala Glu Val His
 256               35                  40                  45
 257       Ala Val Met Ser Glu Ala Ala Thr Lys Ile Ile His Pro Tyr Ala Trp
 258           50                  55                  60
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 08/27/2004
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Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1,2,13,14,15
Seq#:2; Xaa Pos. 1,2,3,7,8,10,12,14,15
Seq#:3; Xaa Pos. 1,14,16,21,29,30,32,33,34,35
Seq#:4; Xaa Pos. 1,2,3,7,8,10,12,14,16,17,18
Seq#:5; Xaa Pos. 1
Seq#:7; Xaa Pos. 13
Seq#:8; Xaa Pos. 15,16
Seq#:10; Xaa Pos. 2,3,4,8,9
Seq#:12; Xaa Pos. 1,9,13
Seq#:15; N Pos. 9
Seq#:18; N Pos. 67,68,69,70,71,72,73,74,75,930,931,932,933,1203
Seq#:19; Xaa Pos. 23,24,25,311,401
Seq#:32; N Pos. 15
Seq#:33; N Pos. 15
Seq#:34; N Pos. 15
Seq#:35; N Pos. 15
Seq#:36; N Pos. 20,66
Seq#:37; Xaa Pos. 12,22
Seq#:38; Xaa Pos. 7,22
Seq#:39; Xaa Pos. 7,9
Seq#:41; Xaa Pos. 1
Seq#:42; N Pos. 665,684,686,697,699,700,703,740
Seq#:43; Xaa Pos. 7,9,14,24,26,30,50,52,64,76,78,96,118,121,134,139,153,209
Seq#:43; Xaa Pos. 213,221,228,232,233,234,237,246
Seq#:44; Xaa Pos. 105,129,198,206,215,222,225,228,229,232,233,234
Seq#:45; Xaa Pos. 43,60,110,117,155,162,170,180,195,222,227,229,233,234,235
Seq#:45; Xaa Pos. 243
Seq#:46; Xaa Pos. 23,24,25
Seq#:51; Xaa Pos. 84,85,86,87,88,97,98,99,100,154,155,180,181,182,183,184
Seq#:51; Xaa Pos. 185,287,288,290,311,322,323,324,325,333,348,389,390,417
Seq#:51; Xaa Pos. 434,435,436,437
Seq#:52; Xaa Pos. 104,105,106,107,144,145,173,197,198,294,295,340,368,369
Seq#:52; Xaa Pos. 370,371
Seq#:53; Xaa Pos. 1,3,4,6,7,8,9,11,12,13,14
Seq#:72; Xaa Pos. 1,3,4,6,7,8,10,11,12,13

Invalid Line Length:
The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 3

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```
L:28 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:40 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:52 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
M:341 Repeated in SeqNo=3
L:68 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
M:341 Repeated in SeqNo=4
L:81 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:104 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:138 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:159 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:191 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
L:221 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:60
M:341 Repeated in SeqNo=18
L:253 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:16
M:341 Repeated in SeqNo=19
L:422 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0
L:435 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:0
L:448 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0
L:472 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
M:341 Repeated in SeqNo=36
L:484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
M:341 Repeated in SeqNo=37
L:498 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
M:341 Repeated in SeqNo=38
L:512 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0
L:535 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0
L:562 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:660
M:341 Repeated in SeqNo=42
L:574 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0
M:341 Repeated in SeqNo=43
L:628 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:96
M:341 Repeated in SeqNo=44
L:662 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:32
M:341 Repeated in SeqNo=45
L:702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:16
L:761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:80
M:341 Repeated in SeqNo=51
L:829 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:96
M:341 Repeated in SeqNo=52
L:883 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:0
L:1070 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:72 after pos.:0
```